AGS OPERATIONS PROCEDURES MANUAL

6.3 LINAC OPERATION FOR BLIP

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Hand Processed Changes

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6.3 LINAC OPERATION FOR BLIP

1. Purpose

To provide instructions for MCR operators regarding acceleration of beam through the linac to the BLIP target following turn on.

2. Responsibilities

2.1 MCR Operators are responsible for the operation of the linac.

2.2 The linac staff is responsible for supporting MCR in linac operation.

3. Prerequisites

3.1 The radiation safety check-off lists for the operation of Linac and BLIP have been completed.

3.2 The Linac turn on for BLIP (OPM 5.2) has been completed. (All systems should have been set to their previous running values during their turn on by the system experts).

3.3 The Linac Operations Coordinator should be consulted prior to operation of the linac following a shutdown.

3.4 Qualified and trained MCR operator.

4. Precautions

The linac tunnel, HEBT, and BLIP must be secured prior to accelerating beam in the linac. A double-redundant radiation safety security system assures that the above conditions are fulfilled.

5. Procedure

5.1 During the linac turn on and checkout, beam will have been transported to the BLIP target by linac staff members. Therefore, tuning of the LEBT, Linac, and the BLIP line will already have been done, and no further tuning should be necessary.

5.2 The upper scope in LCR rack C6 should always be displaying the signal from the multiwire after BM1 in the BLIP line. The multiwire before the BLIP target is normally displayed on the lower scope in LCR rack C6 (selected by the "DAS" button below the scope). The beam should be centered to within a few channels on both these scopes, and the "typical" profile will have been drawn on the scope screen for comparison. These profiles are a good quick indication to whether everything is OK.

5.3 One can check that there is less than a 10% loss of beam between transformers T9, B4, and B5. LRM inhibits of the BLIP beam are also an indication that the tune of the line is not acceptable.

5.4 A beam pipe temperature trip in the BLIP line will shut off the beam until reset in the LCR (rack F8). If this occurs, the beam should be checked carefully after resetting. Further trips should be taken as a serious warning that something is wrong with the tune of the line.

5.5 If the beam to BLIP is not satisfactory, proceed as follows:

5.5.1 Call up the LRM and transformer multiplex signals on the lower scope in LCR-C6 rack. (Selected with the LRM/BT button below the scope). Check that all LRM signals are below 1 V on the multiplex channels. (The map showing the location of each LRM channel is in LCR rack F1). Individual transformer signals can be displayed on the scope in rack C5 by selecting the appropriate button in the same rack. If LRM levels are high in certain BLIP locations, or there is excessive beam loss, tuning will be necessary.

5.5.2 Adjust DACADS 937, BM-1 current, to horizontally center the beam on the first multiwire probe. Adjust DACADS 939, BM-2 current, to center the beam on the multiwire before the BLIP targets. These adjustments should be made in several small steps. The goal is to center the beam while reducing the radiation levels in the BLIP transport.

If problems persist call a linac system specialist for guidance on fault diagnosis.

6. Documentation

Once the linac is operational, any Apollo or DACADS setpoints other than in the Source/LEBT area which differ from previous running values should be recorded in the Linac Operations Logbook.

7. References

Linac turn on for BLIP (5.2)

8. Attachments

None